VALVES & FITTINGS

- REFRIGERANT STRAINER
- THERMOSTATIC EXPANSION VALVE
- GLOBE VALVE
- O, S, & Y GATE VALVE W/SUPERVISORY SWITCH
- GATE VALVE
- CHECK VALVE
- HOSE GATE VALVE
- PLUG VALVE OR BALANCING COCK
- NEEDLE VALVE
- STRAINER
- RELIEF VALVE
- AUTOMATIC FLOW CONTROL VALVE
- MOTOR OPERATED CONTROL VALVE (2-WAY)
- MOTOR OPERATED CONTROL VALVE (3-WAY)
- TEMPERATURE REGULATING VALVE
- SOLENOID VALVE
- PRESSURE REDUCING VALVE
- FLOAT VALVE
- BUTTERFLY VALVE
- BALL VALVE
- BALANCING VALVE
- BOILER BLOW DOWN VALVE – SLOW OPENING
- BOILER BLOW DOWN VALVE – FAST OPENING
- CALIBRATED BRONZE BALANCING VALVE
- PA ANCHOR
- EXPANSION JOINT, SLIDING, WITH ANCHOR
- EXPANSION JOINT, BELLOWS
- PIPE GUIDE
- ELBOW
- TEE
- ELBOW DOWN
- ELBOW UP
- TEE DOWN
- TEE UP
- CAP
- UNION
- PIPE INCREASER OR DECREASER
- FLANGE
- BLIND FLANGE
- AIR VENT
- FLOW SWITCH
- VENTURI FLOW METER
- PRESSURE/TEMPERATURE TAP
- PRESSURE GAUGE
- WATER HAMMER ARRESTER
- HOSE CONNECTION W/CAP

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BOP	BOTTOM OF PIPE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DN	DOWN
(E)	EXISTING
E.A.	EXHAUST AIR
FFE	FINISHED FLOOR ELEVATION
I.E.	INVERT ELEVATION
N.I.C.	NOT IN CONTRACT
O.A.	OUTSIDE AIR
R.A	RETURN AIR
SAN	SANITARY
S.A.	SUPPLY AIR
T.A.	TRANSFER AIR
T&P	TEMPERATURE & PRESSURE
TYP.	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE

HEATING

- LPS — LOW PRESSURE STEAM (0–15 PSI)
- MPS — MEDIUM PRESSURE STEAM (15–50 PSI)
- HPS — HIGH PRESSURE STEAM (ABOVE 50 PSI)
- LPC — LOW PRESSURE CONDENSATE
- MPC — MEDIUM PRESSURE CONDENSATE
- HPC — HIGH PRESSURE CONDENSATE
- PC — PUMPED CONDENSATE
- BFW — FEED WATER
- HTWS — HIGH TEMPERATURE HOT WATER SUPPLY
- HTWR — HIGH TEMPERATURE HOT WATER RETURN
- MTWS — MEDIUM TEMPERATURE HOT WATER SUPPLY
- MTWR — MEDIUM TEMPERATURE HOT WATER RETURN
- HWS — LOW TEMPERATURE HOT WATER SUPPLY
- HWR — LOW TEMPERATURE HOT WATER RETURN
- GHS — GLYCOL HEATING WATER SUPPLY
- GHR — GLYCOL HEATING WATER RETURN
- HCS — DUAL TEMPERATURE WATER SUPPLY
- HCR — DUAL TEMPERATURE WATER RETURN
- BBD — BOILER BLOW-DOWN
- G — GAS
- F & T TRAP
- THERMODYNAMIC TRAP
- BUCKET TRAP
- THERMOSTATIC TRAP
- F FLOAT TRAP

PLUMBING

- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- RECIRCULATING DOMESTIC HOT WATER
- SS — SANITARY SEWER ABOVE FLOOR/FINISHED GRADE
- SANITARY SEWER BELOW FLOOR/FINISHED GRADE
- VENT
- ACID — ACID WASTE
- ACID — ACID VENT
- IW — INDUSTRIAL WASTE
- MW — MAKE-UP WATER
- WF — WALL FAUCET
- WH — WALL HYDRANT
- FCO — CLEAN OUT
- FD — FLOOR DRAIN
- WCO — WALL CLEAN OUT
- SD — STORM DRAIN ABOVE FLOOR/FINISHED GRADE
- SD — STORM DRAIN BELOW FLOOR/FINISHED GRADE
- INSTRUMENTATION PIPING
- D — DRAIN PIPING
- CD — CONDENSATE DRAIN PIPING
- ID — INDIRECT DRAIN PIPING
- NPW — NONPOTABLE WATER
- RD — ROOF DRAIN PIPING
- SF — SOFT WATER
- SANITIZING HOT WATER RETURN
- SANITIZING HOT WATER SUPPLY
- SV — WASTE AND VENT COMBINATION
- ATV — ATMOSPHERIC VENT
- FILL — FILL LINE
- H — HUMIDIFICATION LINE

MISCELLANEOUS SYMBOLS

- HEAVY LINE INDICATES NEW
- LIGHT LINE INDICATES EXISTING
- POINT OF CONNECTION OF NEW TO EXISTING
- T_S TEMPERATURE SENSOR
- T_N NIGHT SETBACK THERMOSTAT
- T_{PB} PUSH BUTTON
- DIRECTION OF FLOW ARROW

DUCTWORK

- SUPPLY DIFFUSER: NECK SIZE / DIFFUSER SYMBOL – SEE SCHEDULE / DESIGN AIRFLOW (CFM) / QUANTITY FOR ROOM OR SPACE / ARROWS INDICATE DIRECTION OF THROW (12"ø, 250, A, (TYP 2))
- RETURN/EXHAUST GRILLE: GRILLE SYMBOL – SEE SCHEDULE (B)
- FLARED SPIN-IN FITTING W/ MANUAL VOLUME DAMPER
- TRANSFER AIR OPENING
- OPPOSED BLADE DAMPERS
- PARALLEL BLADE DAMPERS
- UNIT HEATER (HORIZONTAL)
- POWER OR GRAVITY ROOF VENTILATOR – EXHAUST (ERV)
- 20/12 RECTANGULAR DUCT (1ST FIGURE, SIDE SHOWN 2ND FIGURE, SIDE NOT SHOWN)
- ACOUSTICAL LINING (DUCT DIMENSIONS FOR NET FREE AREA)
- DIRECTION OF FLOW
- DUCT SECTION (SUPPLY)
- DUCT SECTION (EXHAUST/RETURN)
- R INCLINED RISE (R) OR DROP (D) (ARROW IN DIRECTION OF FLOW)
- TRANSITIONS
- TRANSITION: ROUND TO RECTANGULAR
- STANDARD BRANCH FOR RECTANGULAR SUPPLY OR RETURN DUCT
- SPLITTER DAMPER
- VD MANUAL VOLUME DAMPER
- MN or M MOTOR OPERATED DAMPERS
- AD or AD ACCESS DOOR (AD)
- DYNAMIC FIRE DAMPER: F
- CLASS I SMOKE DAMPER: S
- CLASS I COMBINATION FIRE/SMOKE DAMPER: FS
- RADIANT DAMPER: R
- HEAT STOP, FLOOR/CEILING OR ROOF/CEILING ASSEMBLY
- TURNING VANES
- FLEXIBLE DUCT
- FLEXIBLE CONNECTION
- ø ROUND DUCT SYMBOL
- FLAT OVAL DUCT SYMBOL
- UNDERCUT DOOR

TEMPERATURE CONTROLS

SEE TEMPERATURE CONTROL DRAWINGS FOR ADDITIONAL LEGEND

REFRIGERATION

- AD — AMMONIA DISCHARGE
- AL — AMMONIA LIQUID
- AR — AMMONIA RELIEF
- AS — AMMONIA SUCTION
- HGB — HOT GAS BYPASS
- C — CONDENSER WATER SUPPLY
- CR — CONDENSER WATER RETURN
- CHWS — CHILLED-HOT WATER SUPPLY
- CHWS — CHILLED-HOT WATER RETURN
- GCWS — GLYCOL CHILLED WATER SUPPLY
- GCWR — GLYCOL CHILLED WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- RD — REFRIGERANT DISCHARGE

GENERAL NOTES:

1. THESE LEGENDS ARE COMPOSED OF STANDARD SYMBOLS AND ARE PERTINENT TO THE CONDITIONS ON THIS SET OF DRAWINGS TO THE EXTENT APPLICABLE.
2. ADDITIONAL LEGENDS AND/OR ANOTHER LEGEND SHEET MAY APPEAR IN THIS SET OF DRAWINGS TO INDICATE SPECIFIC CONDITIONS IN LIEU OF SYMBOLS SHOWN ON THIS SHEET.
3. EXISTING FACILITIES TO BE REMOVED ARE INDICATED BY USE OF THE FOLLOWING SYMBOL ////////
4. NOT ALL SYMBOLS SHOWN ON THIS LEGEND ARE NECESSARILY USED ON THE FOLLOWING SHEETS.
5. DRAWINGS ARE DIAGRAMMATIC, DO NOT SCALE FOR INSTALLATION. FIELD VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION.

MISCELLANEOUS PIPING

- A — COMPRESSED AIR
- F — FIRE LINE
- F — UNDERSLAB FIRE LINE
- DE — DEIONIZED WATER
- DI — DISTILLED WATER
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN
- FOV — FUEL OIL VENT
- HE — HELIUM
- H — HYDROGEN
- ICW — INDUSTRIAL COLD WATER
- IHR — INDUSTRIAL HOT WATER RETURN
- IHW — INDUSTRIAL HOT WATER SUPPLY
- LN — LIQUID NITROGEN
- LOX — LIQUID OXYGEN
- LPG — LIQUID PETROLEUM GAS
- NO — NITROUS OXIDE
- N — NITROGEN
- OX — OXYGEN
- PN — PNEUMATIC TUBE RUN
- VAC — VACUUM
- VPD — VACUUM PUMP DISCHARGE
- BR — BRINE RETURN
- B — BRINE SUPPLY

Revisions	Date

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Drawing Title	MECHANICAL LEGEND
Project Title	REPLACEMENT OF ABSORPTION CHILLER
Project Number	VA259-12-C-0219
Building Number	BLDG 9
Approved: Medical Center Director	–
Location	2121 NORTH AVENUE GRAND JUNCTION, CO 81505
Drawing Number	H1
Dwg. 3 of 16	
Approved: Assistant Administrator, Engineering Department	–
Date	03/13/2013
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Drawn	DJS

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